

Papis du Web Épisode #6

Performance Web



CLEVER AGE

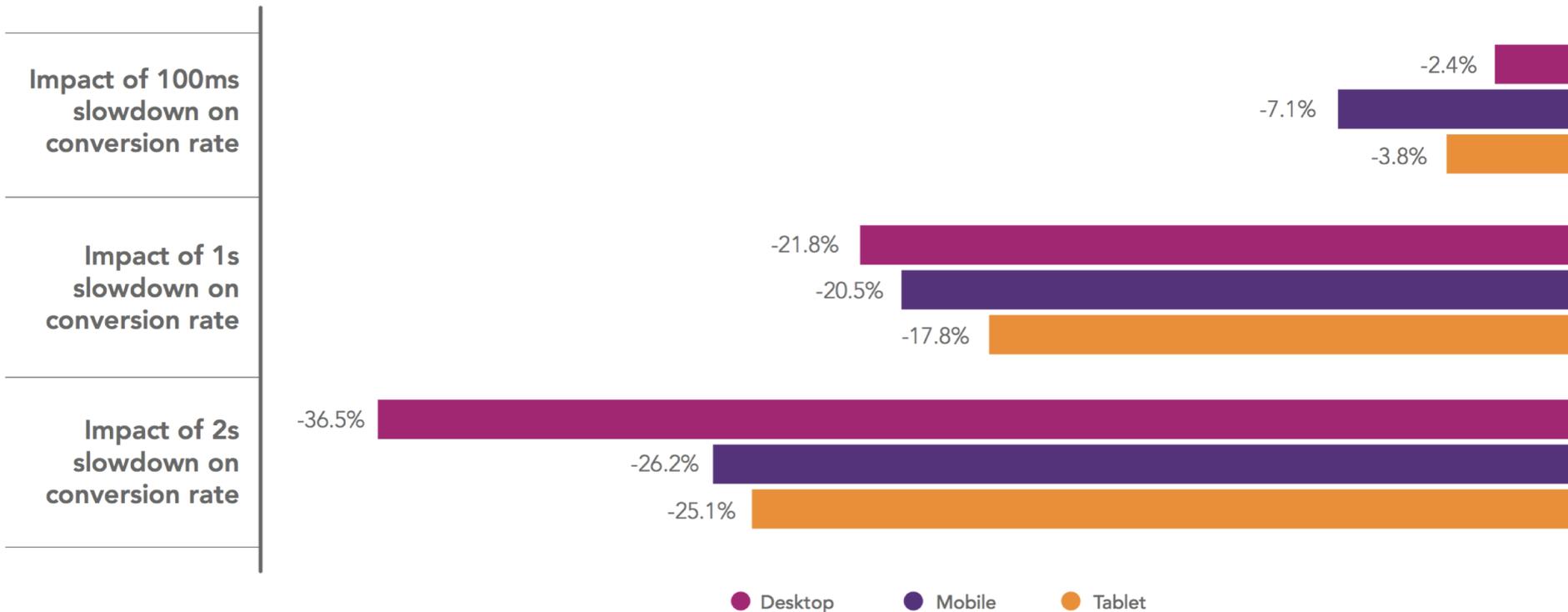


La performance

un élément clef de l'UX

Une mauvaise performance fait fuir

Impact of page slowdowns on conversion rates (by device type)



Source : <https://www.soasta.com/wp-content/uploads/2017/04/State-of-Online-Retail-Performance-Spring-2017.pdf>

Une mauvaise performance fait fuir



As page load time goes from:

1s to 3s the probability of bounce **increases 32%**



1s to 5s the probability of bounce **increases 90%**



1s to 6s the probability of bounce **increases 106%**



1s to 10s the probability of bounce **increases 123%**



think with Google – février 2018

Source : <https://www.thinkwithgoogle.com/marketing-resources/data-measurement/mobile-page-speed-new-industry-benchmarks/>

Avec un site plus rapide...

- La satisfaction des utilisateur est améliorée
- Ils reviennent plus volontiers
- Ils regardent plus de pages à chaque visite
- Le taux de conversion et le CA augmentent
- Des économies d'infrastructure sont possibles
- Un meilleur positionnement chez Google

Pourquoi les sites sont-ils lents ?

Ils sont de plus en plus lourds

MEDIAN DESKTOP
1896.8 KB
▲305.6%

MEDIAN MOBILE
1683.5 KB
▲1062.6%

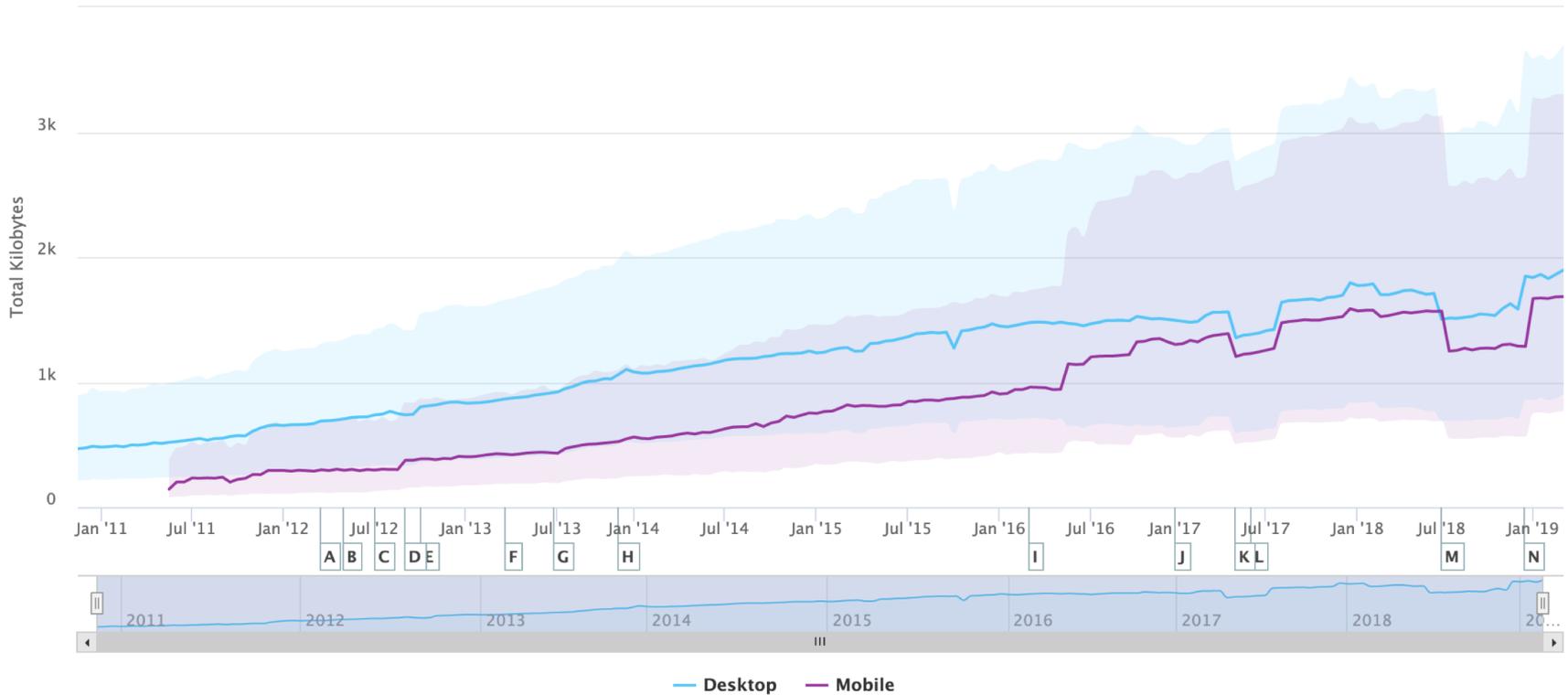
Timeseries of Total Kilobytes

Source: httparchive.org



Zoom 1m 3m 6m YTD 1y 3y **All**

From To



Source : <https://httparchive.org/reports/state-of-the-web>

Ils sont de plus en plus lourds

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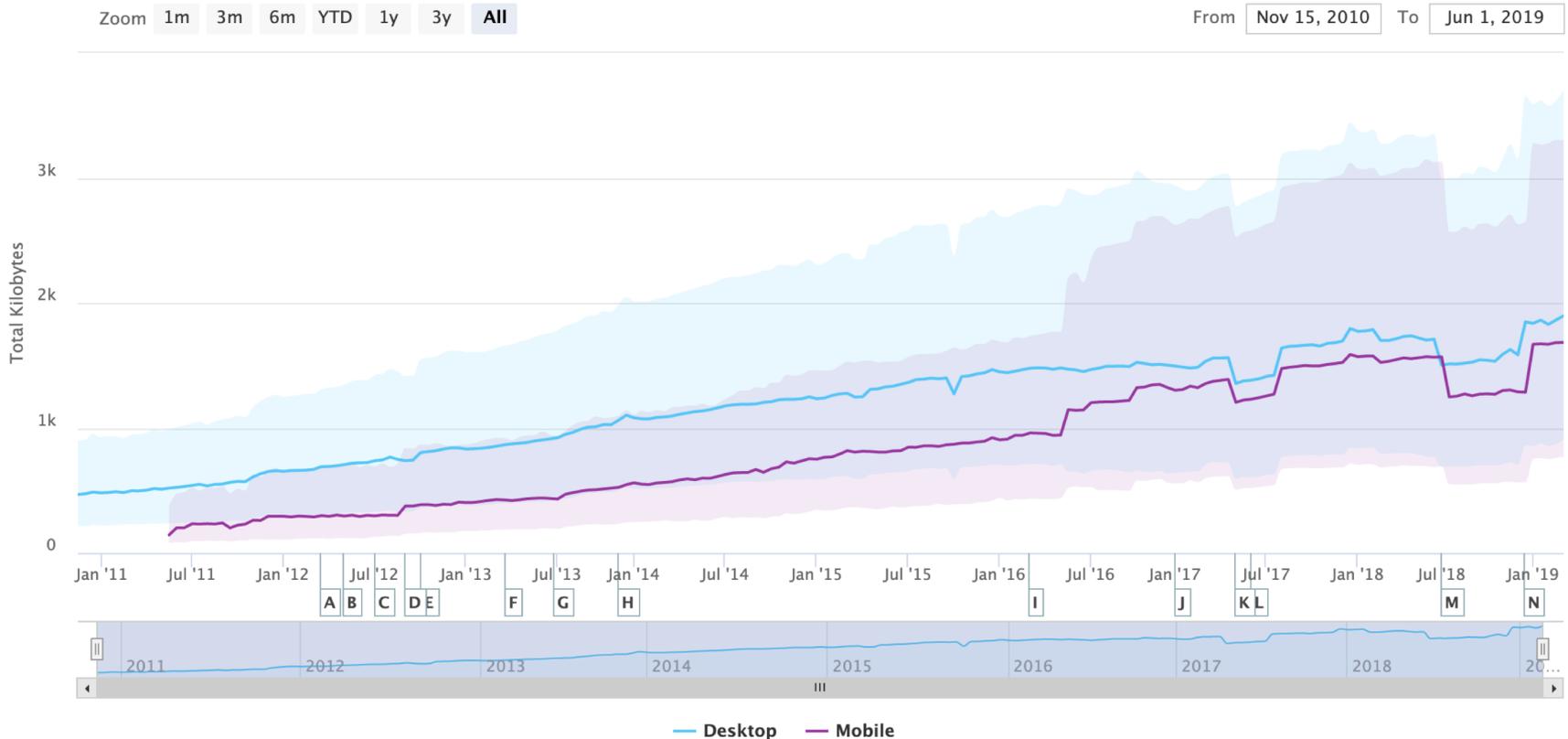
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▲1062.6%

+1000 %



Timeseries of Total Kilobytes

Source: httparchive.org



Source : <https://httparchive.org/reports/state-of-the-web>

Ils sont saturés de JavaScript

MEDIAN DESKTOP
396.3 KB
▲ 347.3%

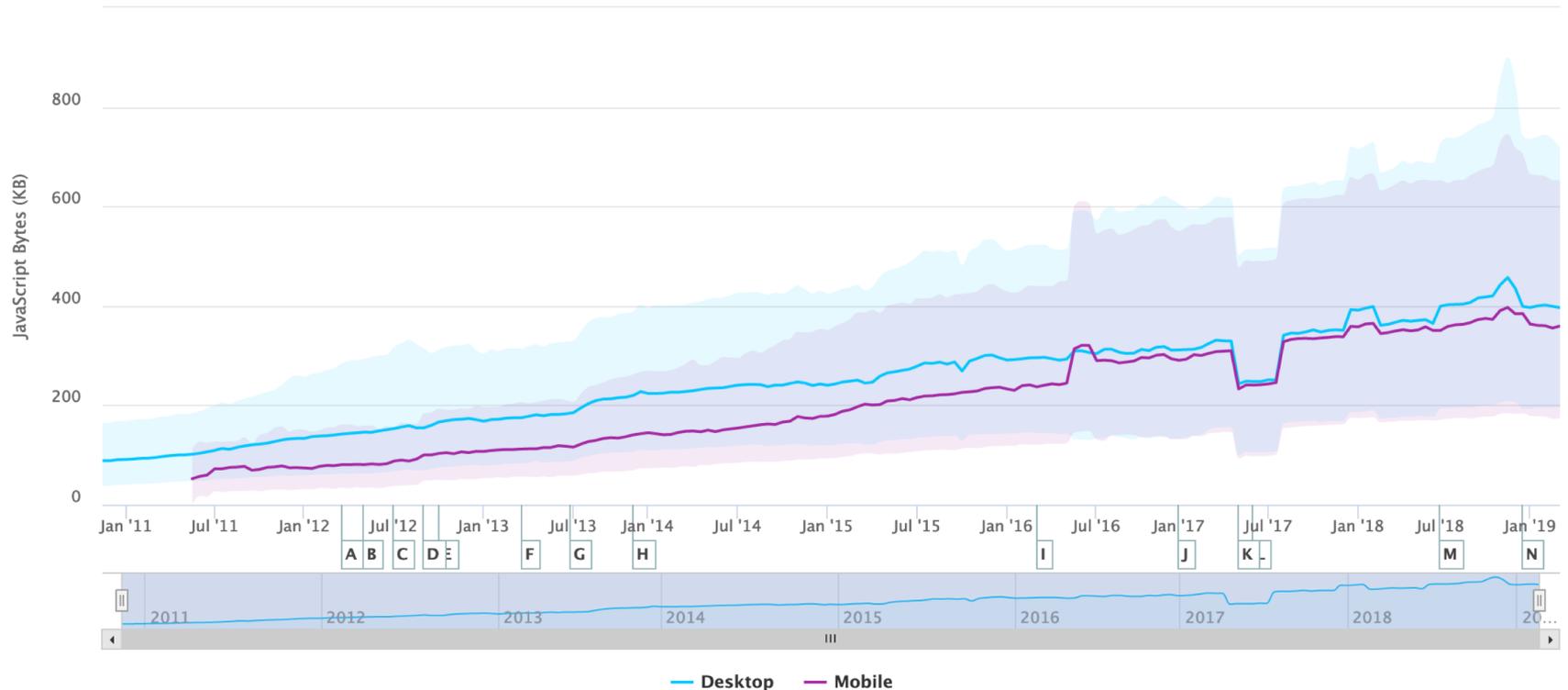
MEDIAN MOBILE
359.6 KB
▲ 586.3%

Timeseries of JavaScript Bytes

Source: httparchive.org

Zoom 1m 3m 6m YTD 1y 3y **All**

From To



Ils sont saturés de JavaScript

MEDIAN DESKTOP
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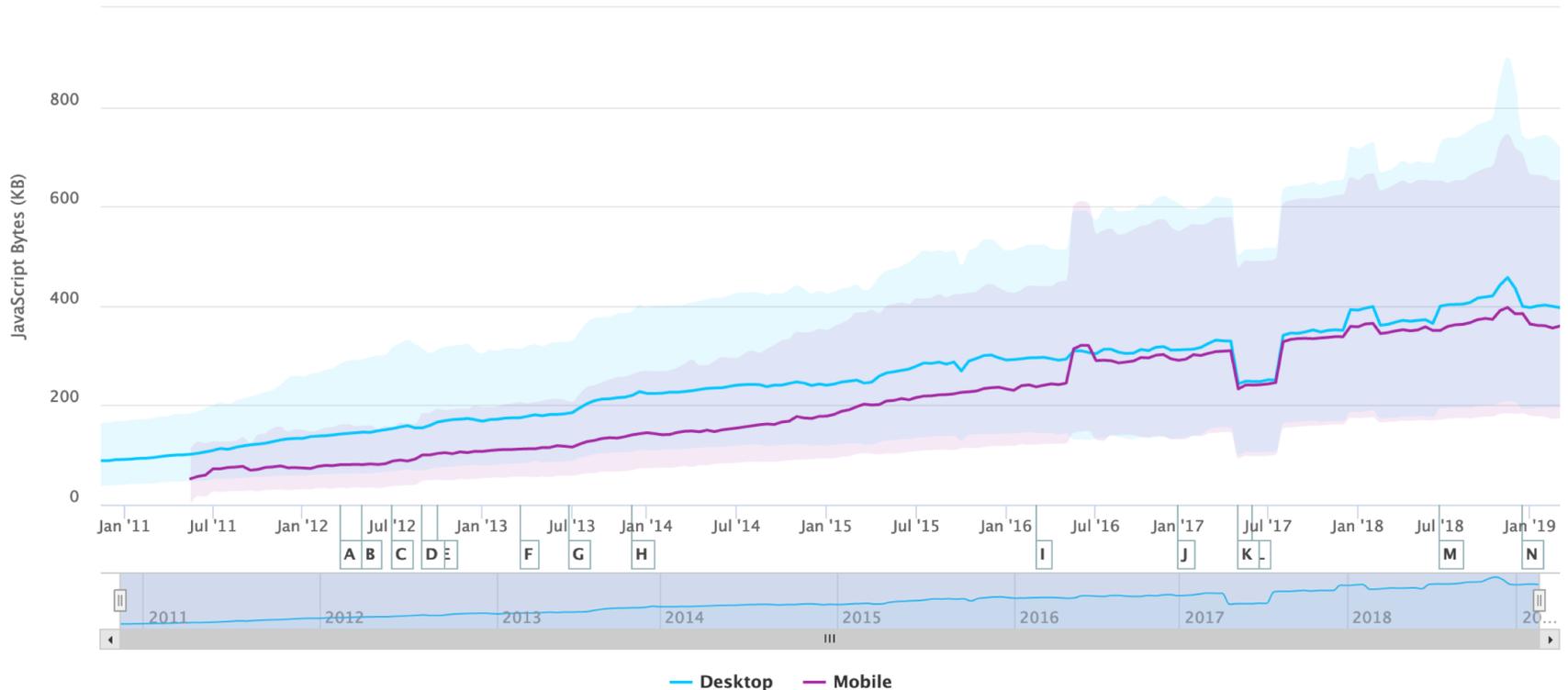
+586 % 🤪

Timeseries of JavaScript Bytes

Source: httparchive.org

Zoom 1m 3m 6m YTD 1y 3y **All**

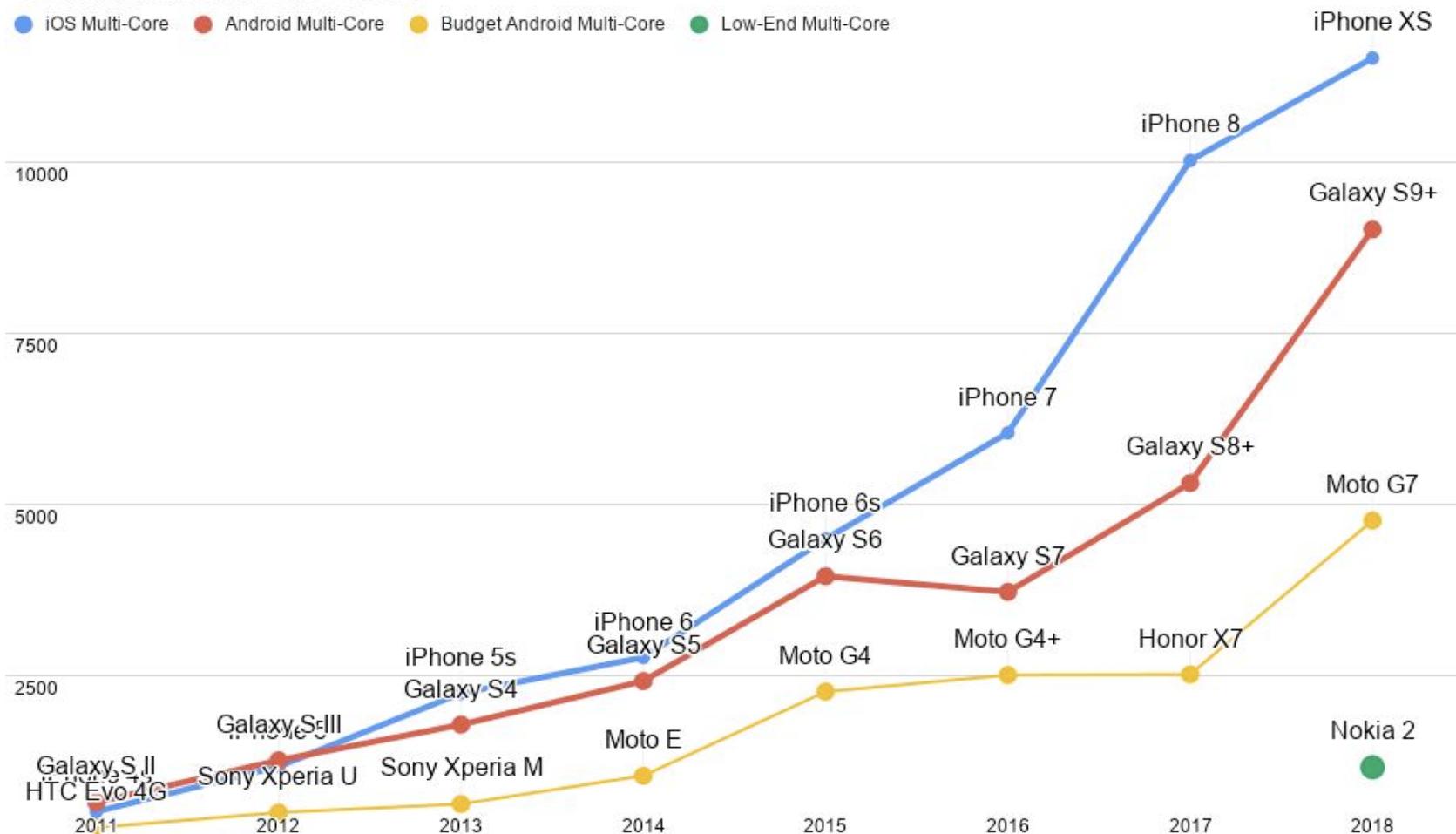
From To



Le JavaScript est la ressource la plus impactante

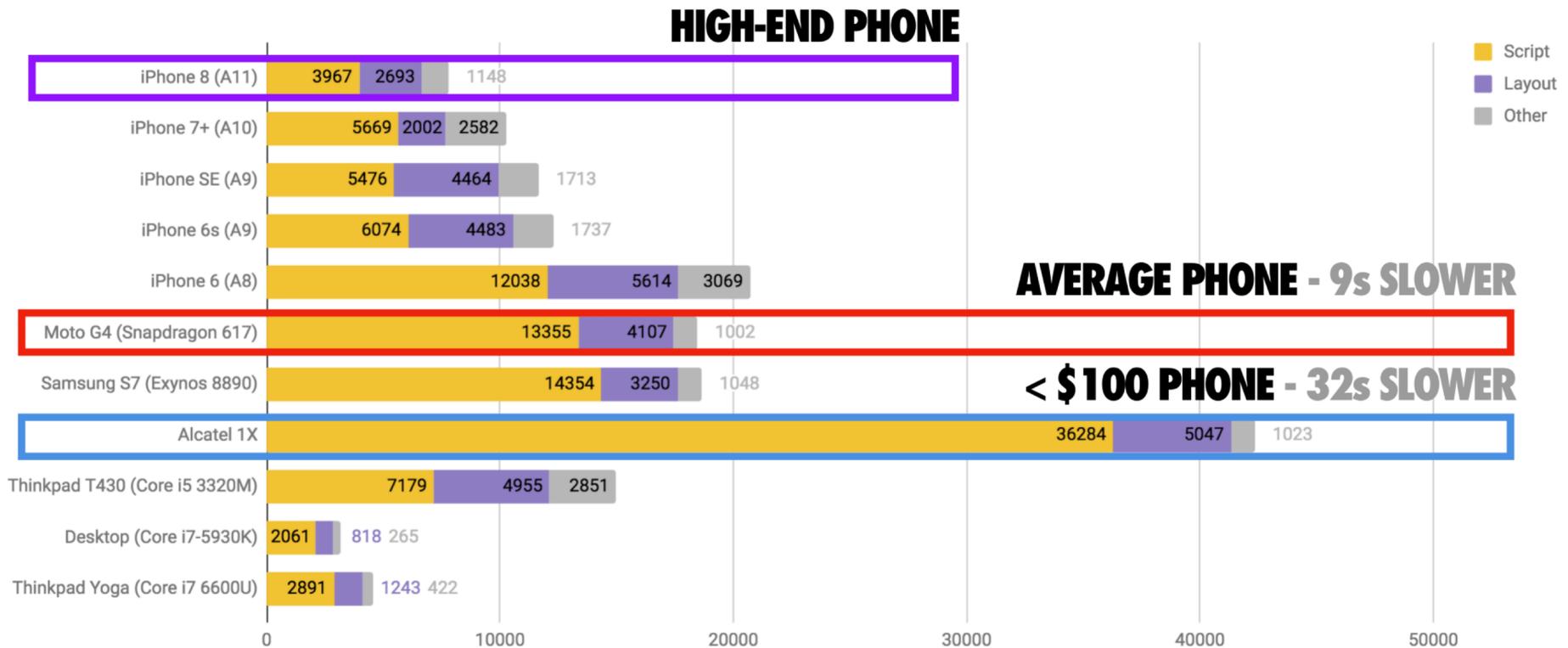
Geekbench Multi-Core Scores

● iOS Multi-Core ● Android Multi-Core ● Budget Android Multi-Core ● Low-End Multi-Core



Le JavaScript est la ressource la plus

JS PROCESSING FOR CNN.COM



Source : <https://medium.com/@addyosmani/the-cost-of-javascript-in-2018-7d8950fbb5d4>

Les services tiers nous plombent

The screenshot shows the WIRED website interface. At the top, the WIRED logo is on the left, the article title "The 21 (and Counting) Biggest Facebook Scandals of 2018" is in the center, and "SIGN IN | SUBSCRIBE" with a search icon is on the right. Below the header is a navigation bar with categories: BUSINESS (highlighted), CULTURE, GEAR, IDEAS, SCIENCE, SECURITY, and TRANSPORTATION. A yellow promotional banner reads "Go beyond the headlines. Subscribe for \$1 a week, and get a free tote. [Subscribe] Cancel anytime." To the right of the banner is a small image of a tote bag with a colorful graphic. The main content area features a "SHARE" section on the left with icons for Facebook, Twitter, Messenger, and Email. The article title "THE 21 (AND COUNTING) BIGGEST FACEBOOK SCANDALS OF 2018" is prominently displayed in large, bold, black letters. Above the title, it says "ISSIE LAPDOWSKY BUSINESS 12.20.18 07:00 AM". Below the title is a photograph of three people (two men and one woman) smiling and talking outdoors. To the right of the article is an advertisement for "allure BEAUTY BOX" with the text "JOIN FOR \$10" and an image of various beauty products. Below the advertisement is a "MOST POPULAR" section with a small thumbnail and the text "SCIENCE Should You Wear White or".

413 requests

7.2 MB transferred

14.8 MB resources

Les services tiers nous plombent

The screenshot shows the Wired website interface. At the top, the Wired logo is on the left, the article title 'The 21 (and Counting) Biggest Facebook Scandals of 2018' is in the center, and 'SIGN IN | SUBSCRIBE' with a search icon is on the right. Below the header is a navigation bar with categories: BUSINESS (highlighted), CULTURE, GEAR, IDEAS, SCIENCE, SECURITY, and TRANSPORTATION. A yellow promotional banner for a subscription reads 'Go beyond the headlines. Subscribe for \$1 a week, and get a free tote. [Subscribe] Cancel anytime.' The main article content includes a 'SHARE' section with social media icons (Facebook, Twitter, Messenger, Email), the author 'ISSIE LAPDOWSKY BUSINESS 12.20.18 07:00 AM', and the title 'THE 21 (AND COUNTING) BIGGEST FACEBOOK SCANDALS OF 2018'. A thumbnail image shows three people outdoors. To the right is an advertisement for 'allure BEAUTY BOX JOIN FOR \$10' featuring various beauty products. Below the ad is a 'MOST POPULAR' section with a small article preview titled 'SCIENCE Should You Wear White or'.



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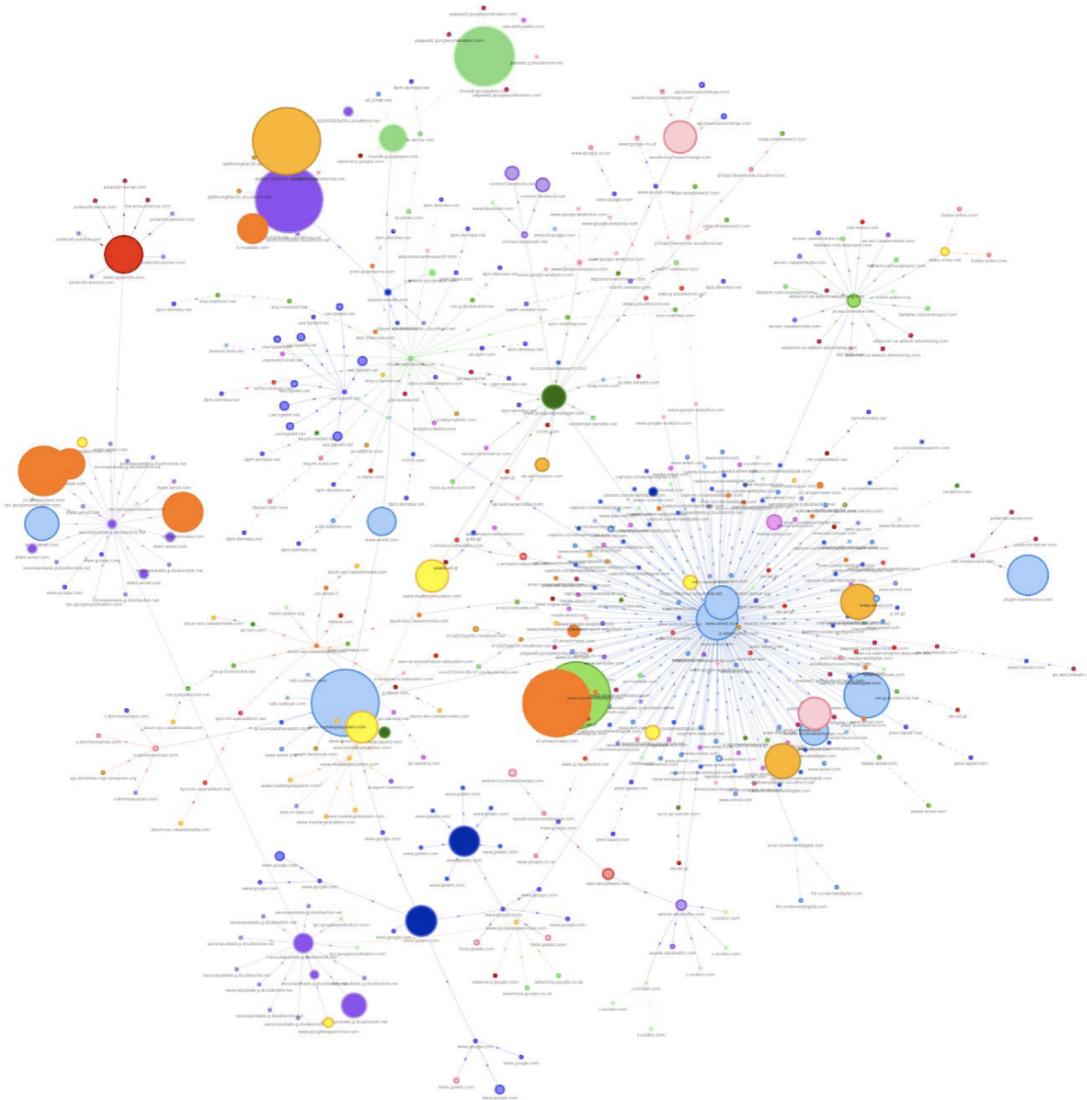


153 requests

3.9 MB transferred

7.0 MB resources

Feu d'artifice sur Request Map : mauvais signe



208 Cookies

- 54 first-party
- 154 third-party

533 third-party requests

170 unique hosts

Source : <https://requestmap.webperf.tools/>

Mais alors, comment faire ?

1. Mesurer

Mesurer en local



Browser devtools



Lighthouse

Etc.

Mesurer ponctuellement à distance

Outils de mesure synthétique



Etc.

Dareboost



Ouch. Some serious work to be done



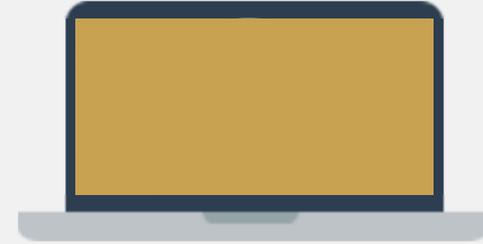
Issues



Improvements



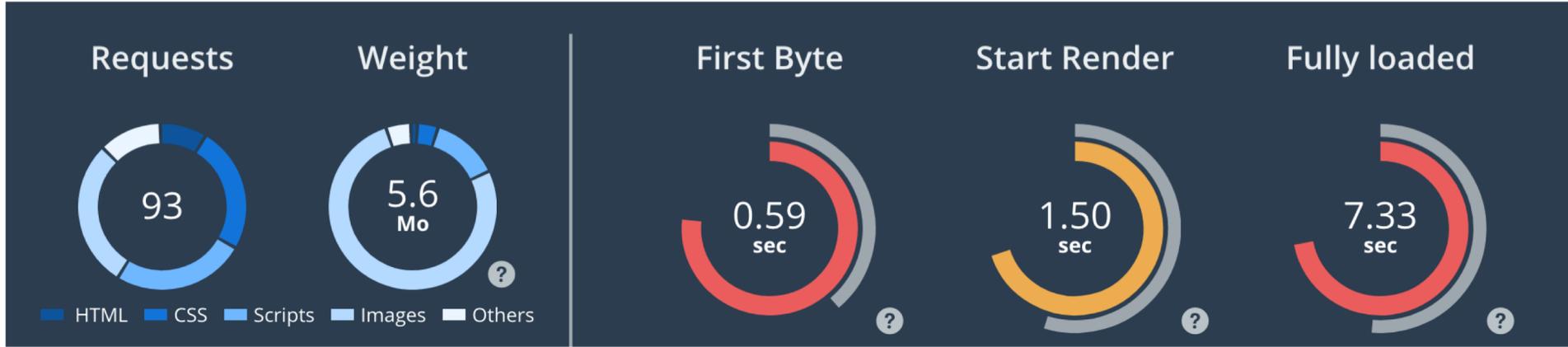
Successes



See your priorities ▾

SIMULATED VISITOR: Chrome Paris 8.0/1.5Mbps (Latency: 50 ms)

[Edit](#) [Memorize](#)

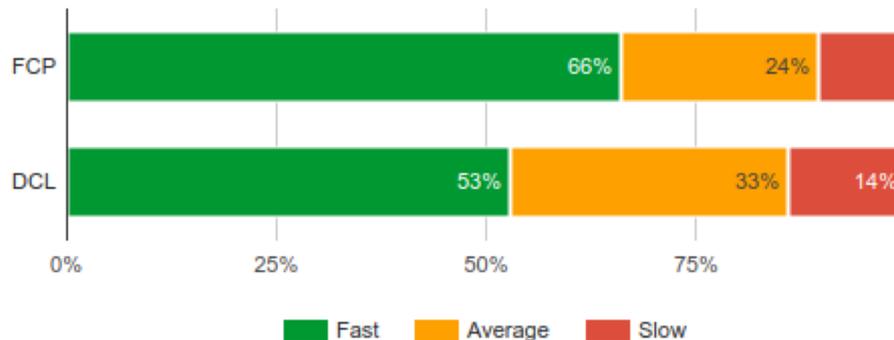


Google PageSpeed Insights



Data from the Chrome User Experience report indicates this page's median **FCP** (1.2s) and **DCL** (2.0s) ranks it in the fastest third of all pages. This page has a good level of optimization because few of its resources are render-blocking. [En savoir plus](#)

Distributions des chargements de page



Mesurer en conditions d'utilisation réelle

Real User Monitoring

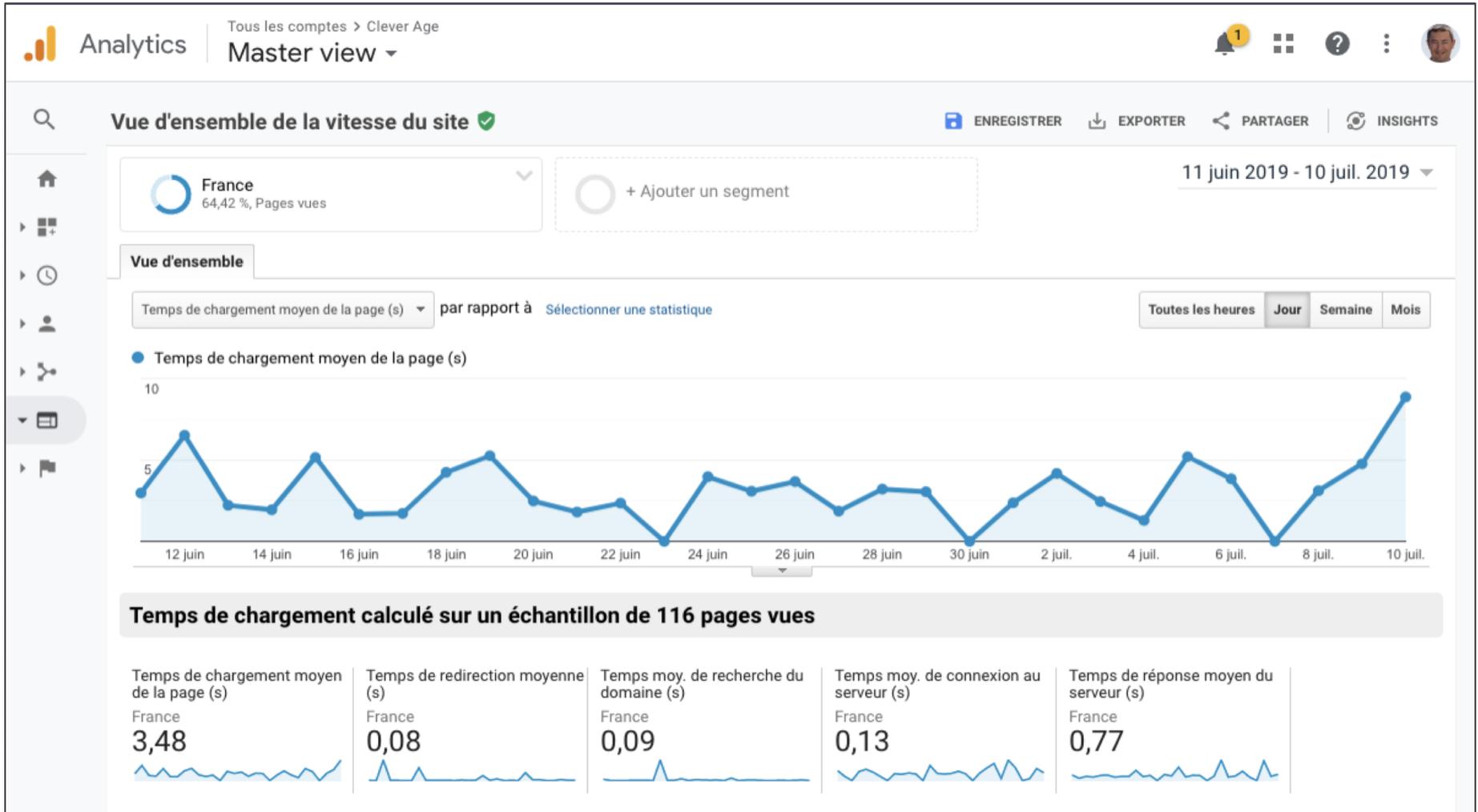


mPulse

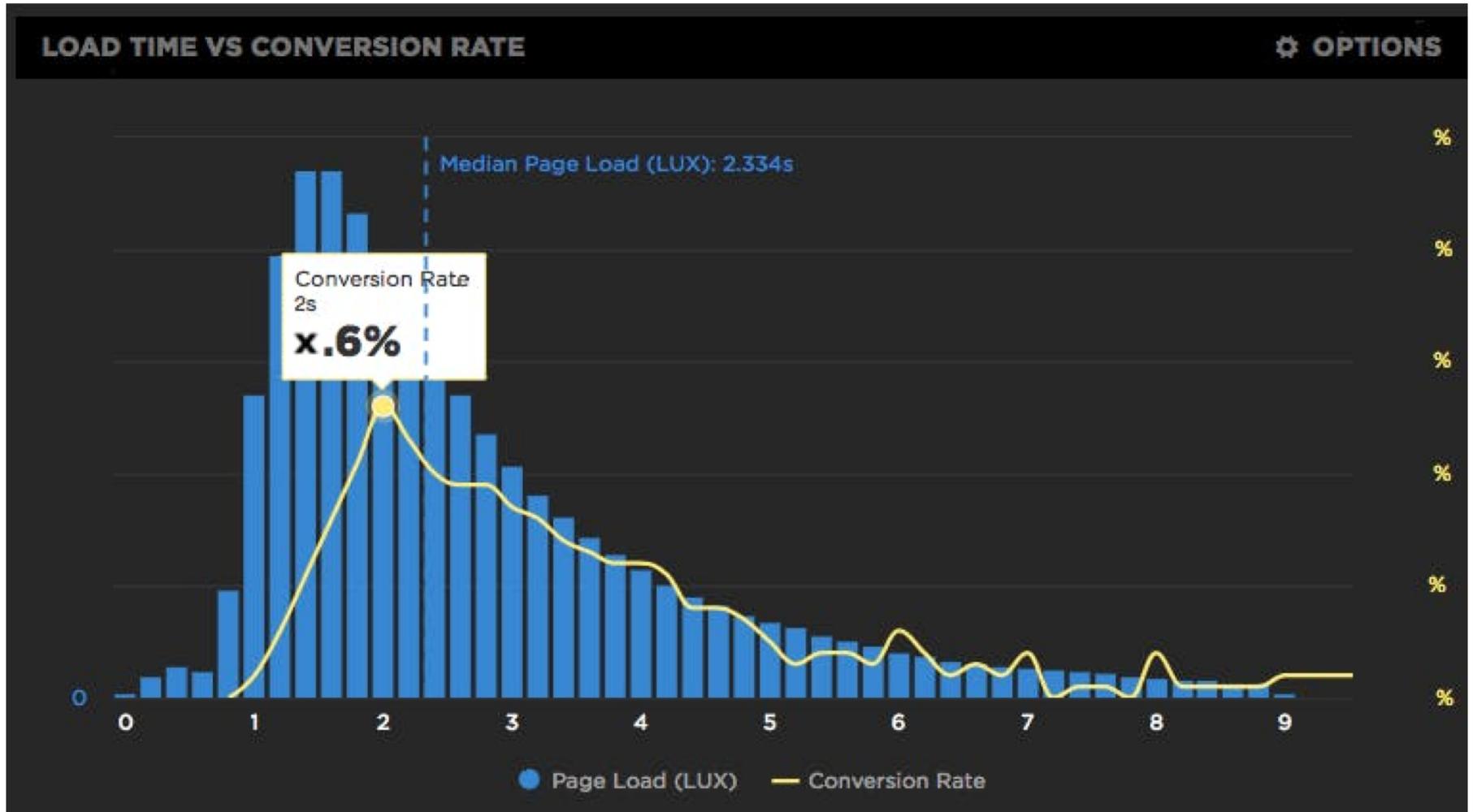


Etc.

Google Analytics



SpeedCurve

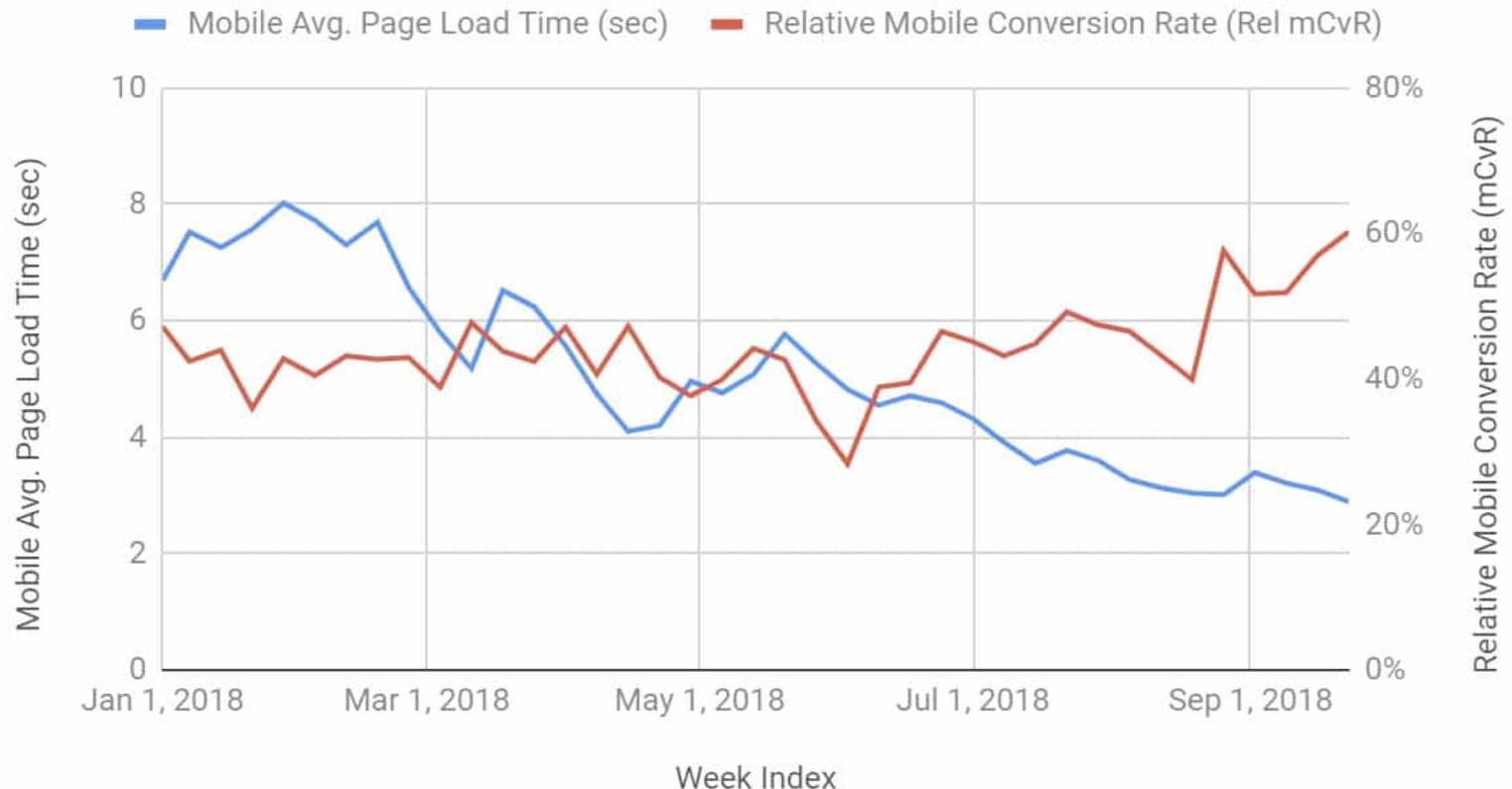


Akamai mPulse



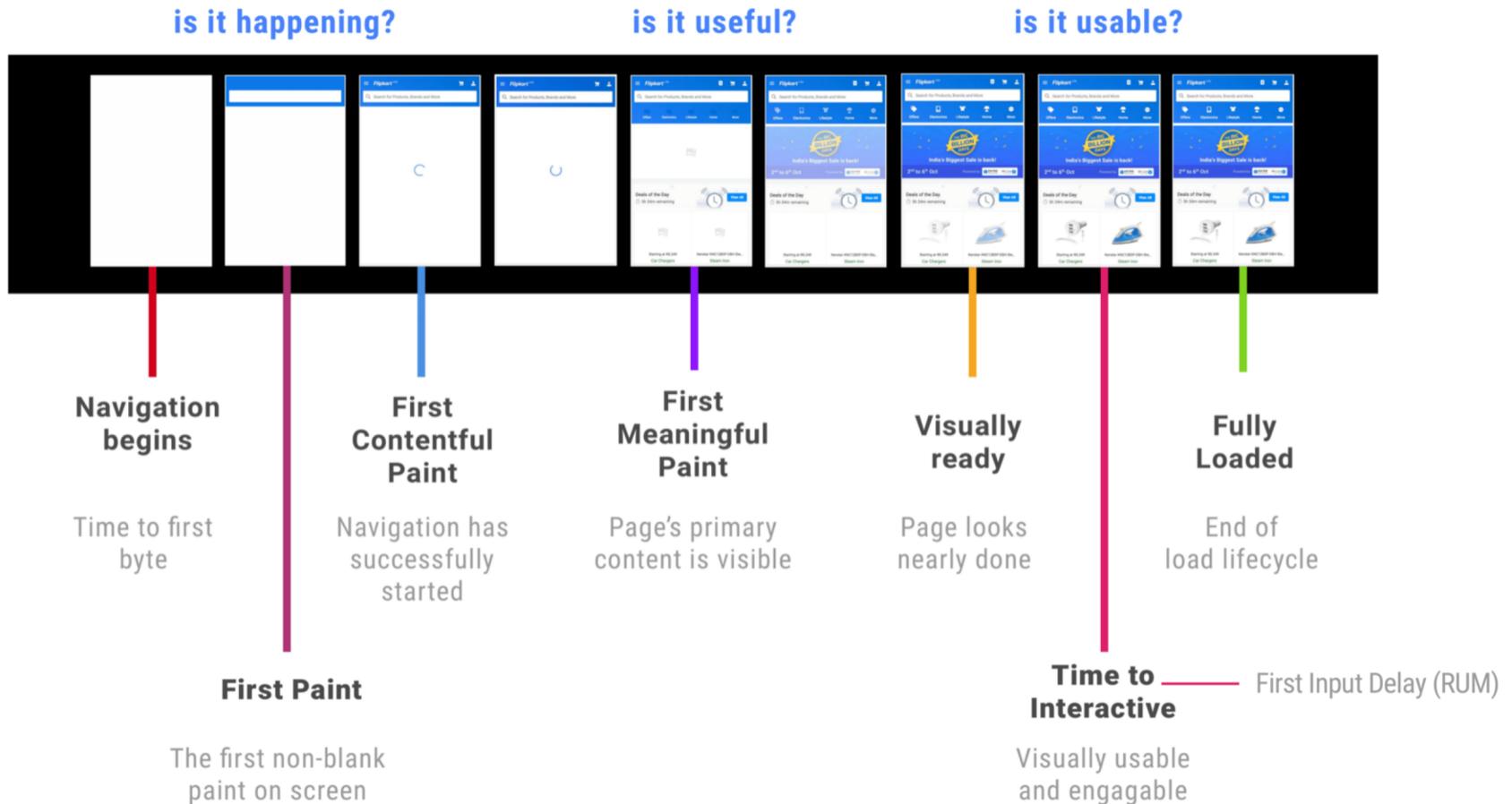
Corrélation entre performance et conversion

Mobile Load Time vs. Relative Mobile Conversion Rate



Source : <https://web.dev/value-of-speed>

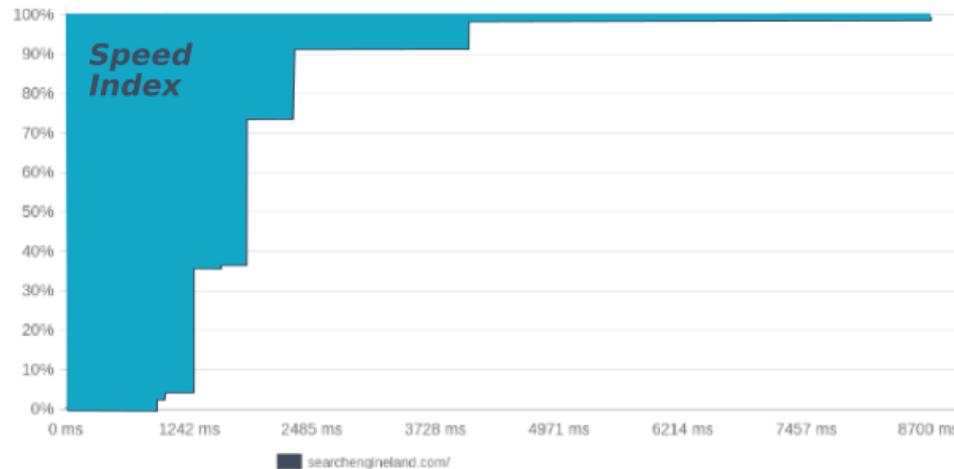
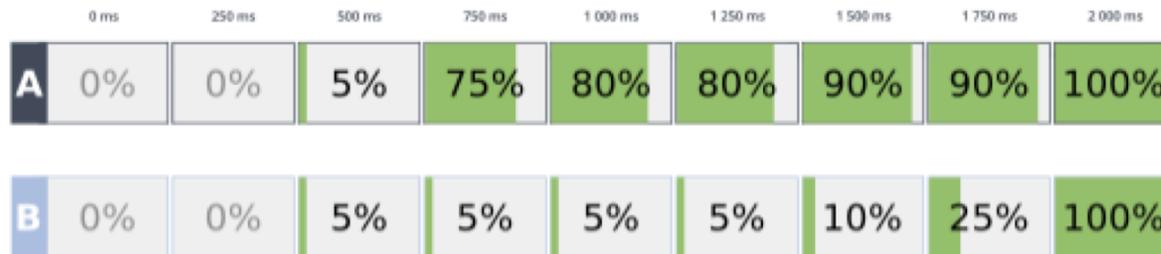
Différentes métriques à surveiller



Source : <https://medium.com/@addyosmani/the-cost-of-javascript-in-2018-7d8950fbb5d4>

Commencez par le Speed Index

Mesure de l'UX via la séquence de rendu du haut de page



Source : <https://blog.dareboost.com/fr/2018/02/speed-index-performance-web/>

2. Optimiser

Comment faire des sites performants ?

Des bonnes pratiques WebPerf connues **depuis plus de 10 ans**, toujours pas appliquées par la plupart des sites.



 **opquast**
open quality standards

La requête la plus rapide est celle que l'on ne fait pas

Éviter les redirections

Ne pas faire charger des ressources non utilisées

- Polyfills JavaScript
- Images inutiles (en responsive notamment)

Utiliser les bons en-têtes HTTP de mise en cache

Limiter l'usage de services tiers

Réduire la latence et les temps de connexion

(DNS + connexion TCP + handshake TLS) × distance

Rapprocher la ressource de l'utilisateur avec des CDN

Limiter le nombre de domaines

Réduire le nombre de requêtes

- Bundles de CSS et JavaScript (mais pas trop)
- Sprites d'images (ou SVG inline)

Optimiser le poids des ressources

Minifier et compresser les assets textuels

- JavaScript et CSS systématiquement
- HTML, SVG éventuellement

Optimiser les images

- Utiliser les bonnes dimensions selon les mises en page
- Adopter les bons formats : WebP, JPEG-XR, etc.
- Limiter les méta données

Optimiser l'ordre de chargement des ressources

CSS et JavaScript critiques peuvent être inline

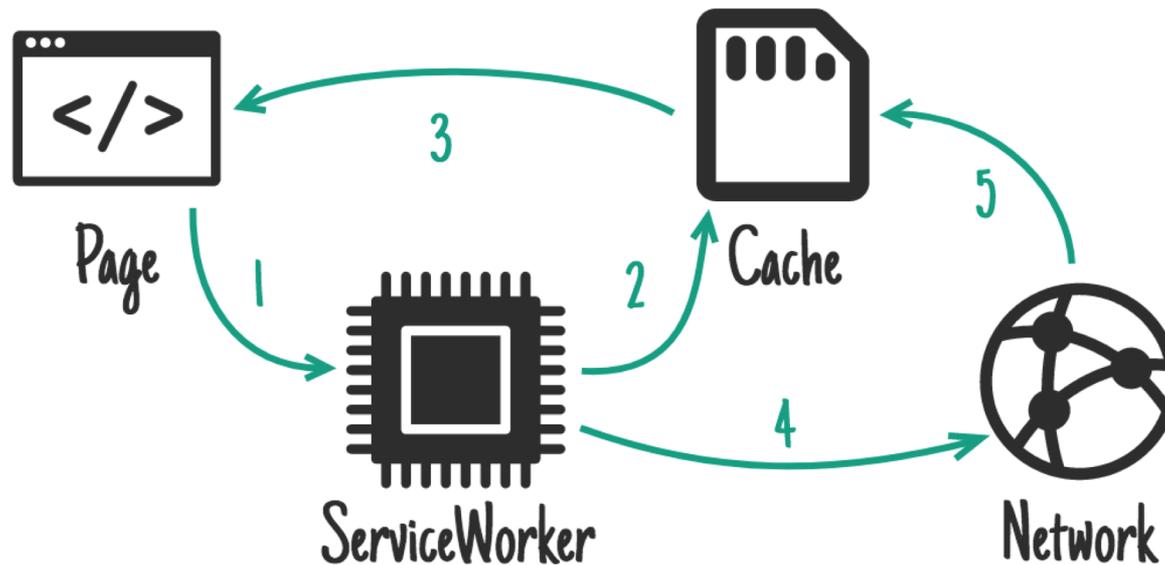
CSS et JavaScript non critiques peuvent être asynchrones

Seules les images visibles au dessus de la ligne de flottaison doivent être chargées rapidement

Profiter de la gestion des priorités de HTTP/2

Exploiter les Service Worker et l'API Cache

L'Offline First : facile techniquement, compliqué côté UX



Source : <https://jakearchibald.com/2014/offline-cookbook/>

3. Répéter

Comme le zéro défaut, la performance ultime n'est jamais atteinte...

